

REVISIONS							
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE
1	6-02	MSM					
2	7-03	MSM					
3	6-04	MSM					
4	11-04	MSM					

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME g2a21104.std

DRWG. ORIG. DATE: APRIL, 2002

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

Steven C. Hutchinson
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)

Jim J. R.
CHIEF ENGINEER

STANDARD DRAWING

10' CONCRETE BARRIER

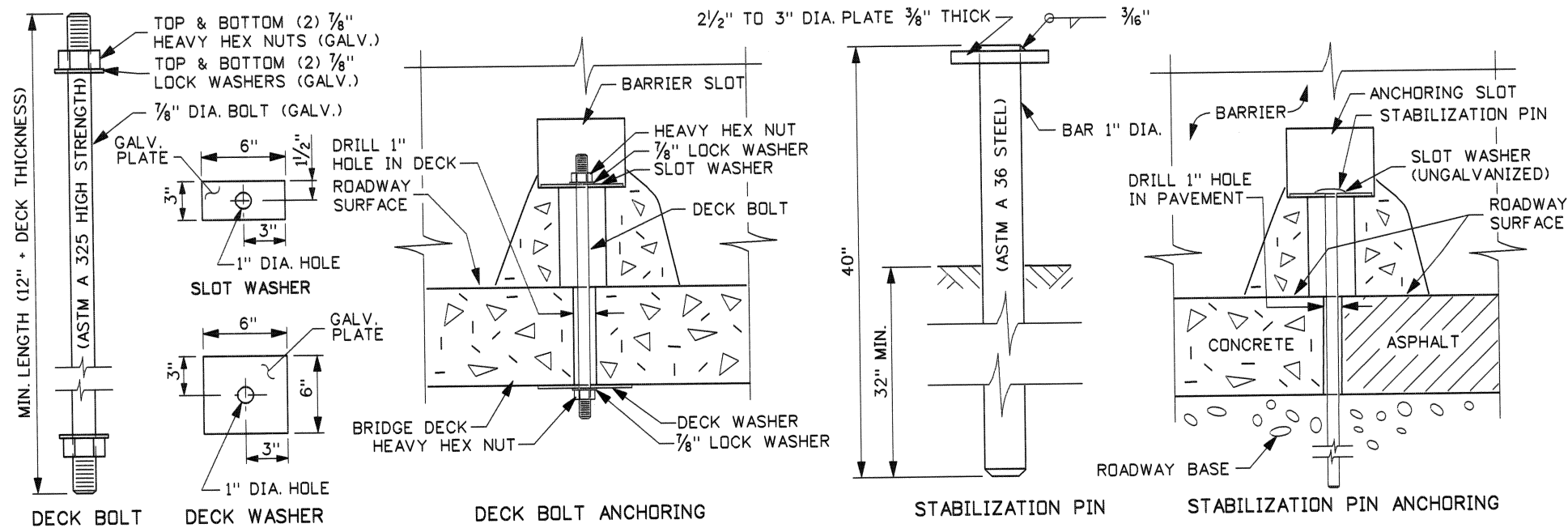
REQUIRES SHEET 2 OF 2

English

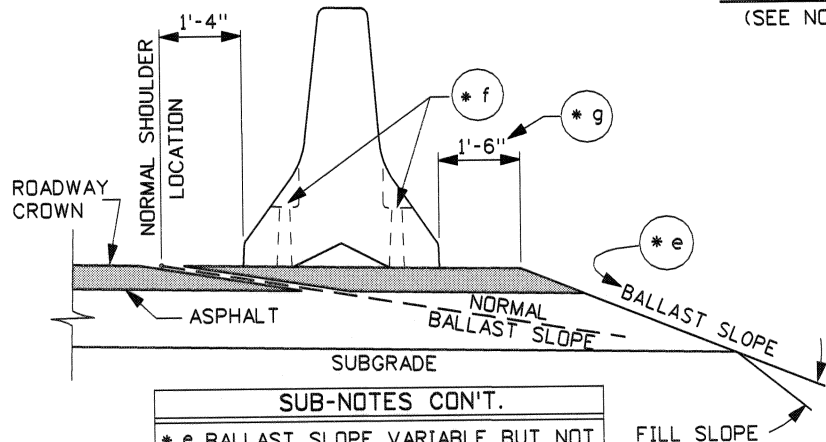
STANDARD DRWG. NO. **G-2-A-2**

SHEET 1 OF 2

PROFESSIONAL ENGINEER
REGISTERED
2240
11/5/04
STATE OF IDAHO
MILFORD L. MILLER



ANCHORING ASSEMBLIES
(SEE NOTE NOS. 1, 3, 4, & 5)

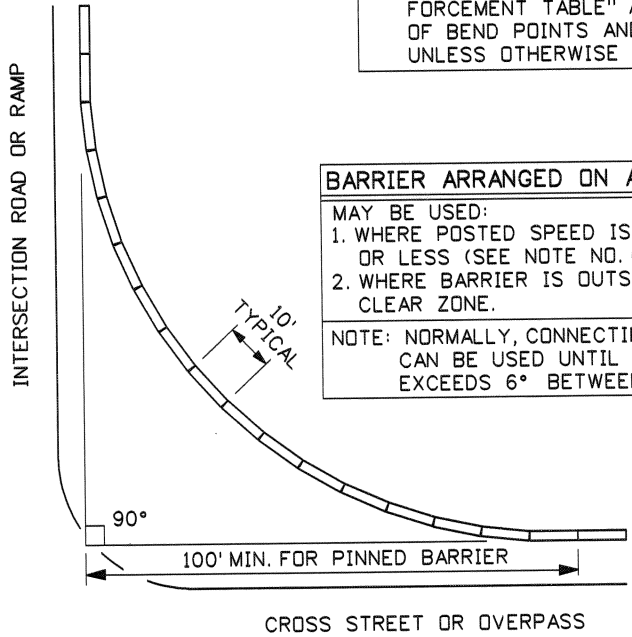


SUB-NOTES CON'T.	
* e	BALLAST SLOPE VARIABLE BUT NOT STEEPER 2:1.
* f	NO STABILIZATION PINS (SEE NOTE NOS. 1 & 3).
* g	WHEN BARRIER IS ANCHORED THE SHOULDER OFFSET MAY BE 0'-0".

STANDARD INSTALLATION

TABLE OF MAXIMUM TAPERS FOR CONCRETE BARRIER	
DESIGN SPEED (mph)	TAPER
70	20:1
60	17:1
50	14:1
45	13:1
40	11:1
35	10:1

SUB-NOTES	
* c	ALL METAL REINFORCEMENT BENDS ARE TO BE ACCORDING TO THE LATEST A.C.I. STANDARD PRACTICE AND AASHTO SPECIFICATIONS.
* d	DIMENSIONS SHOWN IN THE "METAL REINFORCEMENT TABLE" ARE OUT-TO-OUT (O.to O.) OF BEND POINTS AND/OR END OF BARS UNLESS OTHERWISE NOTED.



CURVED LAYOUT
(SEE NOTE NO. 7)

METAL REINFORCEMENT TABLE (SEE SUB-NOTES * c & * d)				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	NO. 5	(6)	9'-6"
H-2	SPACED EVENLY ABOVE SCUPPERS	NO. 5	(3)	6'-6"
H-3	TIED ABOVE H-1 & H-2 BARS @ EACH SIDE OF ANCHOR SLOTS, TIED TO V-1	NO. 4	(2)	1'-6"
V-1	VERTICAL IN BARRIER (3) EACH HALF & (2) CENTERED OVER EACH ANCHORING SLOT	NO. 5	(8)	2" R TOTAL LENGTH 4'-9" 12° 4 7/8" 2'-1 3/8" 10" (-/-) 0.to 0.
S-2	HORIZ. AROUND ANCHOR SLOTS BETWEEN V-1's	NO. 4	(2)	TOTAL LENGTH 5'-3" 1 1/2" R 5'-3" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP 1'-6 1/2" 8" 0.to 0. 1" MIN. CLEAR TO BAR

GENERAL NOTES

- ANCHORING THIS BARRIER IS NOT REQUIRED TO MEET NCHRP 350, TL-3 REQUIREMENTS; HOWEVER, THE BARRIER MUST BE PROPERLY TERMINATED (THIS IS A "STANDARD INSTALLATION"). ANCHORING IS REQUIRED IN SITUATIONS WHERE LATERAL MOVEMENT MUST BE RESTRICTED (NOTE: ANCHORING ASSEMBLIES INCLUDE DECK BOLTS AND STABILIZATION PINS).
- WHEN CONNECTING 10' TO 20' CONCRETE BARRIER THE EXPOSED CONNECTING LOOPS MAY NEED TO BE BENT (MECHANICALLY, NOT WITH HEAT) TO FIT.
- WHEN INSTALLING UNANCHORED 10' CONCRETE BARRIER ALLOW FOR 3' OF LATERAL MOVEMENT BEHIND THE BARRIER.
- IT IS RECOMMENDED THAT ANCHORED BARRIER UNITS HAVE TWO ANCHOR ASSEMBLIES ON THE TRAFFIC SIDE OF THE BARRIER OR FOUR WHEN THE BARRIER IS EXPOSED TO TRAFFIC ON BOTH SIDES (NOTE: EXCEPT WHEN BARRIER IS LYING ACROSS AN EXPANSION JOINT).
- WHEN ANCHORING A BARRIER SYSTEM USE AND DO THE FOLLOWING:
 - DO NOT DRILL ANCHOR HOLES INTO PRESTRESSED CONCRETE DECK PANELS.
 - EXPANSION ANCHORS WILL NOT BE PERMITTED FOR USE ON BRIDGE DECKS.
 - USE ASTM A 325 HIGH STRENGTH GALVANIZED STEEL FOR DECK BOLTS AND NUTS.
 - ASTM A 36 STEEL SHALL BE USED FOR CONNECTION LOOPS, THE CONNECTION PIN, AND THE STABILIZATION PIN. A ONE PIECE STABILIZATION PIN WITH A 3" ROUNDED TOP THAT MEETS ASTM A 36 REQUIREMENTS IS ALLOWED.
 - BRIDGE DECK ANCHOR HOLES SHALL BE DRILLED/CORED SMOOTH AND ROUND.
 - WHEN A BARRIER UNIT EXTENDS ACROSS AN EXPANSION/CONTRACTION JOINT, ANCHOR ONLY ONE SIDE OF THE UNIT. INSTALL TWO ANCHOR BOLTS ON FARTHEST END FROM THE JOINT (NORMAL INSTALLATION REQUIRES TWO BOLTS ON THE TRAFFIC SIDE).
 - TIGHTEN DECK BOLTS DOWN WELL, TIGHTEN NUTS SO AT LEAST ONE COURSE OF THREADS SHOW OUTSIDE OF THE NUT.
 - DO NOT PROTRUDE THE TOP OF THE DECK BOLT/STABILIZATION PIN HEAD OR END BEYOND WHERE THE SLOT EDGE MEETS THE EXTERIOR BARRIER SURFACE.
- FOR SPEEDS GREATER THAN OR EQUAL TO 35 mph BARRIERS MUST BE PINNED TOGETHER AND CAN NOT EXCEED THE TABLE OF MAXIMUM TAPERS.
- THE DESIGN FOR PIN CONNECTED 10' BARRIER ALLOWS FOR:
 - APPROXIMATELY FIFTEEN TO SIXTEEN PINNED BARRIER UNITS TO COMPLETE A 90° TURN.
 - BARRIER JOINTS CAN BEND APPROX. 6° BEFORE MEETING RESISTANCE.
- THE UNIT SHALL BE PRECAST USING CONCRETE CLASS 40B. THE MIN. CONCRETE COVER OVER REINFORCEMENT STEEL SHALL BE 2" UNLESS OTHERWISE NOTED.
- NOT TO SCALE.

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IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO



Assistant Chief Engineer (Development)

Chief Engineer

STANDARD DRAWING

10' CONCRETE BARRIER

REQUIRES SHEET 1 OF 2

English

STANDARD DRWG. NO.

G-2-A-2

SHEET 2 OF 2

